60X/XPS01-01

Orbit 60 240 W AC/DC Industrial Power Supply

Product scope

- Delivers 240 W at nominal 24 VDC with an adjustable 23.5–28.0 VDC output range.
- Provides 15 A peak current for up to four seconds to support demanding transient loads.
- Uses approval option 01 for csa/nrtl/c class i, division 2 approval.

Manufacturer source

Baker Hughes Bently Nevada Orbit 60 AC/DC Power Supply Datasheet 142M8947 Rev. D

Baker Hughes Bently Nevada Orbit 60 AC/DC Industrial Power Supply Datasheet 142M8947 Rev. D.

Request a fast quote	Product reference	
Email: info@apterpower.com Phone: +86 18106909650 apter.com/inquiry.php	60X/XPS01-01	

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60X/XPS01-01 product reference

Orbit 60 240 W AC/DC Industrial Power Supply

Verified configuration

Bently Nevada 60X/XPS01-01 is the 240 W, 24 VDC Orbit 60 power supply for 3U chassis service with CSA/NRTL/C Class I, Division 2 approval.

Manufacturer	Bently Nevada
Model	60X/XPS01-01
Product family	Orbit 60 Series
Product type	Industrial AC/DC Power Supply
Ordering code	60X/XPS01-01
Approval option	01 = CSA/NRTL/C Class I, Division 2 approval
Chassis compatibility	3U Orbit 60 chassis
Maximum output power	240 W
Nominal output voltage	24 VDC
Adjustable output	23.5 to 28.0 VDC
Maximum output current	10 A
Peak output current	15 A for up to 4 seconds

Manufacturer source

Baker Hughes Bently Nevada Orbit 60 AC/DC Power Supply Datasheet 142M8947 Rev. D

The following pages retain the manufacturer technical content for configuration and engineering review.

ORBIT 60 SERIES
AC-DC Industrial Power Supply
Datasheet

Cordant™

142M8947 Rev. D

Description

This generation of DIN-rail power supplies combines the most efficient circuittopology with optimized cost/performance ratio for industrial environments and for electrical control cabinets. They have a very high efficiency of up to 95.0% which allows a very slim package design. The output voltage is adjustable from −2% to +17%. The case offers the potentially useful feature to fix the DIN-rail clip to the side wall for the mounting inside flat panels. Over a period of minimum 4 seconds they can operate with a boost power of 150%. The boost power facilitates the activation of stepper motors, solenoids or actuators. The units operate with a high power factor of up to 98% by active power factor correction which also keeps the input inrush current low.

- Slim profile for DIN-rail mounting
- Alternative side-mounting for flat panels
- High power factor by active power correction
- Very high efficiency up to 95%
- Back power immunity
- 150% peak current for 4 seconds
- Operating temperature range: −40°C to +70°C max.
- Adjustable output voltage
- Short circuit and overload protection
- 3-year product warranty

Output Power max.	Output Voltage Nominal	Output Current max.	Output Current peak	Efficiency typical
240 Watt	24 VDC (23.5 - 28.0 VDC)	10,000 mA	15,000 mA	95 %
480 Watt	24 VDC (23.5 - 28.0 VDC)	20,000 mA	30,000 mA	95 %

Baker Hughes

Specifications

Inputs

Description	240 Watt	480 Watt
Input Voltage	85 - 264 Vac (full range) 100-250 Vdc	85 - 264 Vac (full range) 100-250 Vdc
Input Frequency	45 - 65 Hz	45 - 65 Hz
Power Consumption	2,300 mW typical (at no load)	4,900 mW typical (at no load)
Input Inrush Current	30 A max. (at 230 Vac)	30 A max. (at 230 Vac)
Recommended Input Fuse	(The need of an external fuse has to be assessed in the final application.)	

"The Bently Nevada™ Orbit 60 Series system was qualified with the power supplies listed in this datasheet. Use of a reduced wattage power supply may result in changed behavior under fault conditions."

Outputs

Specification	240 Watt	480 Watt
Output Power maximum	240 Watts max	480 Watts max
Output Voltage nominal (adjustable)	24 Vdc (23.5 - 28.0 Vdc)	24 Vdc (23.5 - 28.0 Vdc)
	(by trim potentiometer) Output power must not exceed rated power.	
Output Current maximum	10,000 mA	20,000 mA
Output Current peak	15,000 mA	30,000 mA
	150% max. peak operation power 4 s max. peak operation time (auto switch off) 10 s typical off time During peak operation, the unit continuously switches off the output voltage after 4 s and restarts after approximately 10 s.	
Efficiency typical	95%	95%
Regulation	0.1% max. input variation (Vmin - Vmax) 0.5% max. load variation (10 - 90%)	
Ripple and Noise	100 mVp-p max. (20 MHz Bandwidth)	
Capacitive Load	Infinite	
Minimum Load	Not required	
Temperature Coefficient	±0.02%/K max.	
Hold-up Time (full load)	20 ms min.	
Hold-up Time (75% max load)	47 ms typical	
Hold-up Time (75% max load w/ redundancy)	50 ms min.	
Start-up Time	2,000 ms max.	
Short Circuit Protection	Continuous, automatic recovery	

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Specification	240 Watt	480 Watt
Overload Protection	Constant current mode Switch off after 4 s delay, automatic restart	
Output Current Limitation	155% min. of Iout max.	
Overvoltage Protection	117 - 146% of Vout nom. 32 - 35 VDC (24 VDC model) (In case of an internal error a second voltage regulation loop keeps the output voltage at a save level, the power supply turnes off and tries to restart after 10 s.)	
Transient Response	600 mV max. Peak Variation (10% to 90% Load Step) 2000 µs typical Response Time (10% to 90% Load Step)	600 mV max. Peak Variation (10% to 90% Load Step) 5000 µs typical Response Time (10% to 90% Load Step)

All specifications valid at nominal voltage, full load and +25°C after warm-up time unless otherwise stated.

LED Indications

Power OK Indication	
Status Indicator	Indicated by green LEDs: front and side
Trigger Threshold	OK: 22.5 VDC, Off: 21.5 VDC
Power OK Relay	
Power OK	Relay contact closed
Power Off	Relay contact open
Pin Specifications	30 VDC / 1 A max.

Electrical

Over Voltage Category	OVC II
Switching Frequency	75 - 100 kHz (PWM)
Insulation System	Reinforced Insulation
Isolation Test Voltage	
Input to Output, 60 s	3,000 VAC
Input to Case or PE, 60 s	1,500 VDC
Output to Case or PE, 60 s	750 VDC
Creepage	
Input to Output	8 mm min.
Input to Case or PE	4 mm min.
Output to Case or PE	1.5 mm min.
Clearance	
Input to Output	8 mm min.
Input to Case or PE	4 mm min.
Output to Case or PE	1.5 mm min.
Leakage Current	
Earth Leakage Current	3500 µA max.
Touch Current	240 Watt: 310 µA max. 480 Watt: 880 µA max.

Physical

Housing Material	Aluminum (Chassis) Stainless Steel (Cover)
Housing Type	Screw Terminal

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Mounting	DIN-rails as per EN 50022-35×15/7.5
Weight	240 Watt: 643 g 480 Watt: 1018 g

Environmental

Relative Humidity	95% max. (non condensing)	
Temperature Ranges	Operating Temperature	−40°C to +70°C
Power Derating	High Temperature	2 %/K above 60°C (at standard operation) 3%/K above 60°C (at peak power mode)
	Low Input Voltage	3%/V below 90 VAC (at standard operation) 1.5 %/V below 100 VAC (at peak power mode)
Over Temperature Protection Switch Off	Protection Mode	Latch Off
Cooling System	Natural convection (20 LFM)	
Altitude During Operation	2,000 m max.	
Protection Class	Class I (Prepared): Connection to PE	
Pollution Degree	PD 2	

Environment (Compliance to EN 61373 only with optional DIN-Rail Clip TIB-RMK01)	Vibration	EN 61373 IEC 60068-2-6 2 g, 3 axis, sine sweep, 10-55 Hz, 11 oct/min
	Mechanical Shock	EN 61373 IEC 60068-2-27 25 g, 3 axis, half sine, 11 ms
Thermal Impedance	240 Watt: 0.95 K/W 480 Watt: 0.6 K/W	
Power Back Immunity	35 V max. (When external voltage is supplied above set output voltage and below OVP threshold, the power supply will function normally without switch off or destruction, even if external voltage is applied continuously.)	

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Compliance and Certifications

FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

EMC

European Community Directive:

EMC Directive 2014/30/EU

Standards:

EN 61000-6-2; Immunity for Industrial Environments

EN 61000-6-4; Emissions for Industrial Environments

Electrical Safety

European Community Directive:

LV Directive 2014/35/EU

Standards:

EN 61010-1;

EN 61010-2-201;

RoHS

European Community Directive:

RoHS Directive 2011/65/EU

Functional Safety

This component is non-interfering with the safety system. The system SIL 2 certification does not require this component be SIL certified.

Hazardous Area Approvals

For the detailed listing of country and product-specific approvals, refer to the *Approvals Quick Reference Guide (108M1756)*.

For additional technical documentation, please log in to bntechsupport.com and access the Bently Nevada Media Library.

cNRTLus

Class I, Zone 2: AEx/Ex ec nC IIC T4 Gc;
Class I, Division 2, Groups A, B, C, D T4;

T4 @ Ta= -30˚C to +70˚C (-22˚F to +158˚F)

De-rating conditions must be considered. Refer to installation drawing for details.

ATEX/IECEx

Ex II 3 G
Ex ec nC IIC T4 Gc

T4 @ Ta= -30˚C to +70˚C (-22˚F to +158˚F)

De-rating conditions must be considered. Refer to installation drawing for details.

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Ordering Information

For the detailed listing of country and product-specific approvals, refer to the *Approvals Quick Reference Guide (108M1756)*.

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AC/DC Industrial Power Supply

Specific Power Supplies are exclusively used with either the 3U (240 W) or 6U (480 W chassis).

Ordering Option	Description
60X/XPS01-AAA • 240 Watt AC/DC (3U) Industrial Power Supply	
AAA – Agency Approvals	
00	No Hazardous Area
01	CSA/NRTL/C (Class I, Div 2)
02	Multi (CSA, ATEX, IECEx)
XXX	Country Specific Approvals
60X/XPS02-AAA • 480 Watt AC/DC (6U) Industrial Power Supply	
AAA – Agency Approvals	
00	No Hazardous Area
01	CSA/NRTL/C (Class I, Div 2)
02	Multi (CSA, ATEX, IECEx)
XXX	Country Specific Approvals

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Graphs and Figures

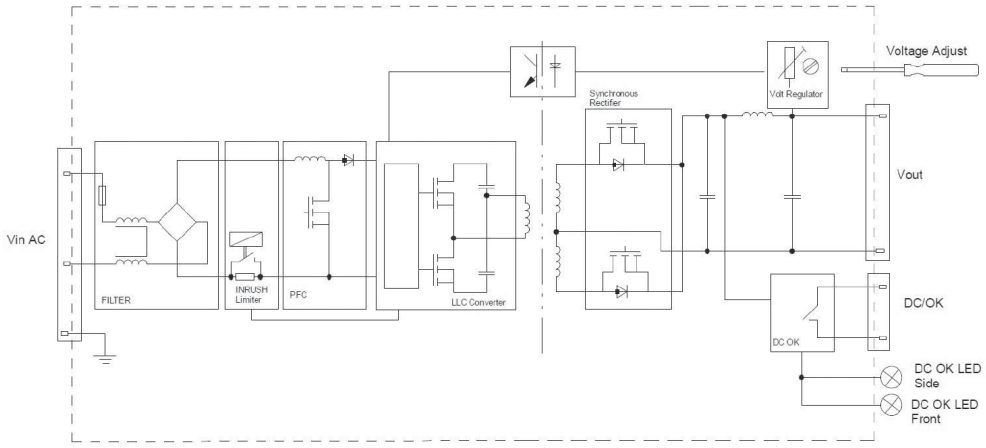

Figure 1: 240 Watt Black Diagram

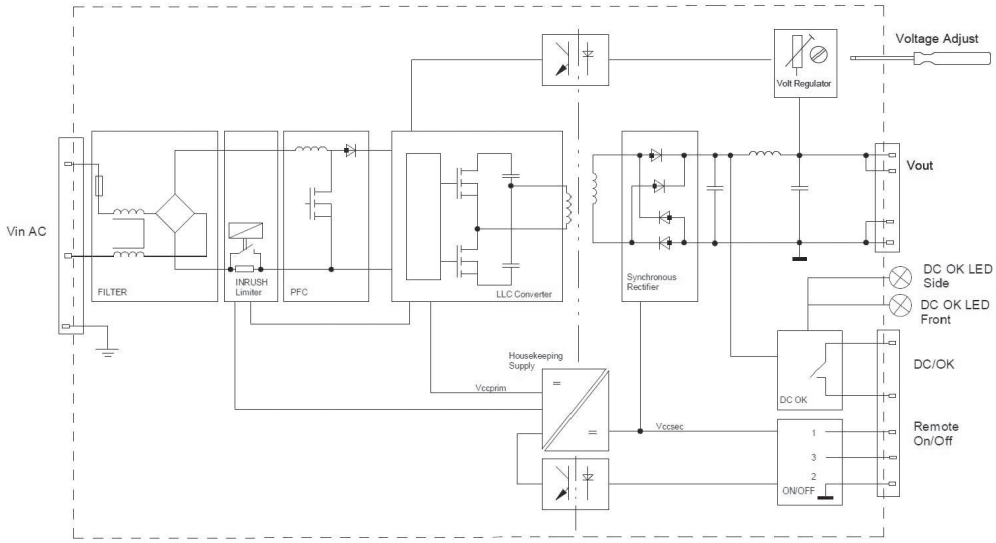

Figure 2: 480 Watt Black Diagram

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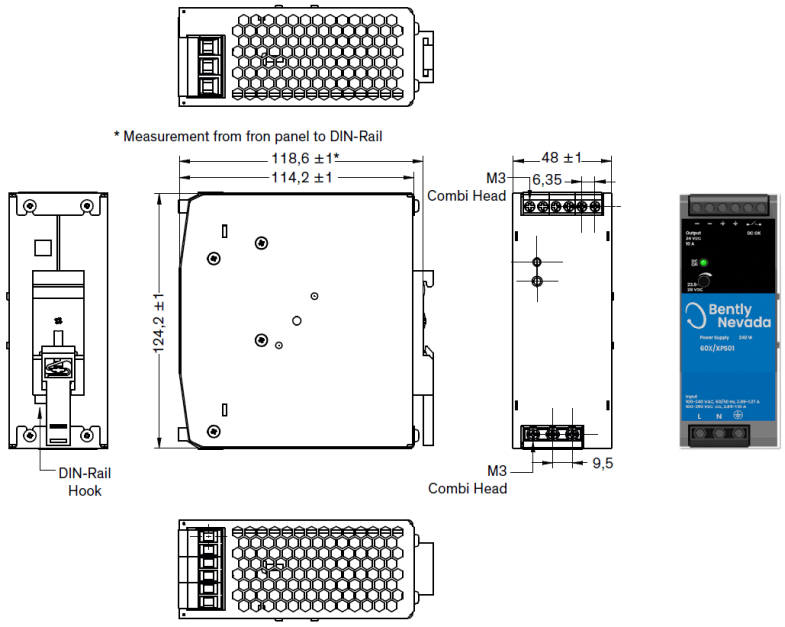

Figure 3: 240 Watt Outline Dimensions

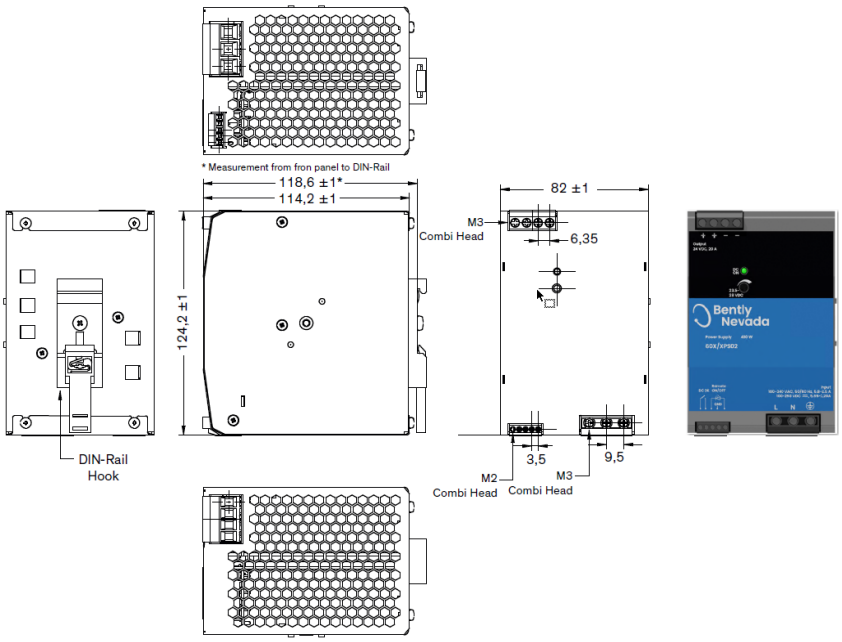

Figure 4: 480 Watt Outline Dimensions

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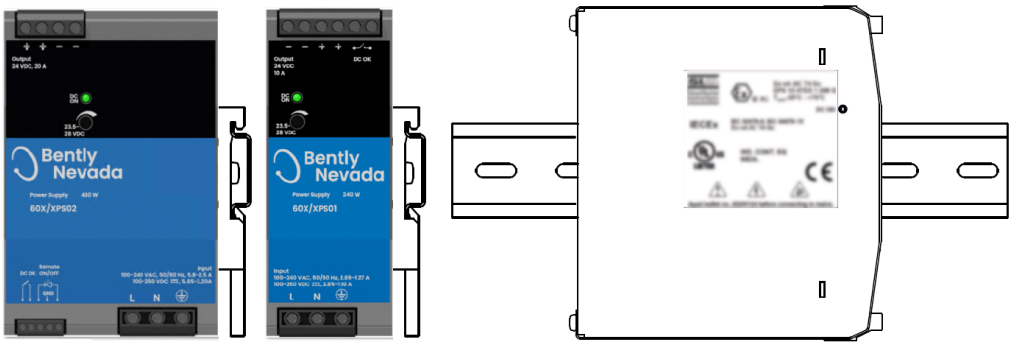

Figure 5: Alternative Side Mounting

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